REMARKS

Applicants appreciate the Examiner's thorough consideration provided the present application. Claims 1-8, 12-16 and 19-23 are currently pending in the instant application. Claims 1, 3, 5, 7 and 19 have been amended. Claims 1, 5, 7, 12, 19 and 22 are independent. Claims 17 and 18 have been cancelled. Reconsideration of the present application is earnestly solicited.

Reasons for Entry of Amendment

As discussed in greater detail hereinafter, Applicants respectfully submit that the rejections under 35 U.S.C. § 102 and 103(a) are improper and should be withdrawn. Accordingly, the finality of the Final Office Action mailed on November 4, 2002 should be withdrawn.

If the Examiner persists in maintaining his rejections, Applicants submit that this Amendment was not presented at an earlier date in view of the fact that Applicants are responding to new grounds of rejection and/or the Examiner's apparent use of Official Notice (and Applicants' subsequent traversal) in a Final Office Action. In accordance with the requirements of 37 CFR 1.116, Applicants respectfully request entry and consideration of the foregoing amendments as they remove issues for appeal (claims are cancelled) and place the current application in a condition for allowance.

All wabl Subj ct Matter

Applicants appreciate the Examiner's indication of allowable subject matter. Specifically, claims 12-15, 22 and 23 have been allowed by the Examiner. As described in greater detail hereinafter, Applicants submit that claims 1-8, 16 and 19-21 should also be allowed and the present application should be passed to Issue.

Minor Informalities/Claim Rejections Under 35 U.S.C. § 112

The Examiner has identified potential informalities with the claims. Specifically, claims 1-8 and 16-21 have been rejected under 35 U.S.C. § 112, second paragraph. This rejection is respectfully traversed.

In light of the foregoing amendments to the claims, Applicants submit that each of these rejections have been obviated and/or rendered moot. Without conceding the propriety of the Examiner's rejection, but merely to expedite advance the prosecution of the present application, Applicants have amended the claims to remove the presence of the alleged informalities. Accordingly, this rejection should be withdrawn.

The Examiner has indicated the use of the phrase "at least one of" is indefinite as an improper Markush group. Applicants submit that this phrase is not referring to a Markush group. Applicants request the Examiner review section 2173.05(h) of the MPEP entitled "Alternative Limitations." Specifically,

Roman Numeral II of this section refers to alternative language that has been deemed acceptable and definite by the courts. In light of the foregoing amendments to the claims, Applicants submit that this limitation has been obviated and/or rendered moot.

Drawings

It appears that the drawings have been objected to by the Examiner. However, Applicants submit that the Examiner's position is unclear and/or unreasonable. Specifically, it appears that the Examiner has objected to FIG. 2 or FIG. 3, or FIGs. 2 and 3 of the present application. However, the Examiner has not identified any specific figure in the objection. Accordingly, clarification of the Examiner's position is respectfully requested.

With respect to either or both of FIGs. 2 and 3, Applicants can only guess that the Examiner's position is that elements 24a, 24b prongs of the present application would be inoperative because the clearances shown between the prongs and their support device 27 is not sufficient to allow the head portion 37 of the anvil 33 to open and/or close the prongs 24a, 24b. However, the Examiner is reminded that drawings in patent applications are not meant to be concise blue prints of the claimed invention, e.g., capable of being dropping off at the machine shop for subsequent manufacture and complete with machine tolerances and/or specific dimensions.

Therefore, one of ordinary skill in the art would readily appreciate that the portion of the prongs (elements 24a, 24b) immediately surrounding the pivots (element 25a, 25b) would obviously require some clearance to permit the prongs to move relative to the support device (element 27). However, if there is a specific region of FIG. 2 or FIG. 3 that the Examiner would prefer to be shown with additional clearance, Applicants respectfully request that the Examiner contact the undersigned via telephone in the Washington, DC area to discuss possible amendments to the drawings. Accordingly, if the foregoing comments do not satisfy the Examiner's objection to the drawings, Applicants respectfully submit that they are unable to amend that which has not been identified by the Examiner. Since the Examiner has not specifically objected to any particular drawing, any further changes to the drawings must be held in abeyance by the Examiner until such time that the Examiner clarifies this objection so that Applicants are afforded the opportunity to properly respond to any objection(s).

Claim Rejections Under 35 U.S.C. § 102

Claims 1 and 5 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Doty (U.S. Patent No. 3,293,018). Claims 1 and 6 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Zauner (U.S. Patent No. 3,257,186). Claims 1-5, 7-8, 16-17 and 19-21 stand rejected

under 35 U.S.C. § 102(b) as being anticipated by Zauner (U.S. Patent No. 4,441,908). These rejections are respectfully traversed.

In light of the foregoing amendments to the claims, Applicants submit that these rejections have been obviated and/or rendered moot. Specifically, the prior art of record fails to teach or suggest each and every limitation of the unique combination of elements of the claimed invention.

With respect to claim 1, Applicants submit that the prior art of record fails to teach or suggest the unique combination of elements of the claimed invention, including the limitation(s) of "An apparatus for shaping a selected end region of a hollow cylindrical glass tube used in the manufacture of optic fibers comprising. . .*an optical sensing device for sensing a physical condition of the tube.*" (emphasis added) As admitted by the Examiner (see Examiner's comments under 35 U.S.C. § 102(b) and omission of claim 18), the prior art of record fails to teach or suggest this limitation of the claimed invention. Therefore, this rejection should be withdrawn.

With respect to claim 5, Applicants submit that the prior art of record fails to teach or suggest the unique combination of elements of the claimed invention, including the limitation(s) of "an apparatus for shaping a selected end region of a hollow cylindrical glass tube used in the manufacture of optic fibers comprising. . .a support device for holding the tube at a second region other than the selected end region and for rotating the tube in a controlled

manner, *wherein said support device is a lathe.*" (emphasis added) It is the Examiner's position that only the Zauner ('908) patent teaches the limitation of the support device being a lathe (see page 5 of the Office Action). Specifically, the Examiner states that "the Zauner device is a lathe in as much as Applicant's device is. Applicant's support device is merely the chuck (work piece holder) of a lathe. In as Applicant's chuck is a lathe, Zauner's chuck is a lathe." This position and the Examiner's mischaracterization of the claimed invention is respectfully traversed.

The Examiner is referred to the specification of the present application, including but not limited to page 12 and FIG. 5(a). "Referring to FIG. 5A, there is shown an apparatus for semi-automatically, or automatically, shaping a selected end 121 of the tube. Tube 12 is firmly positioned within a central opening 64 of a rotatable chuck 62 of a horizontally mounted controlled speed lathe 60. The lathe supports the tube 12 and ensures that the tube 12 is rotated at a controlled speed." Therefore, Applicants clearly show, claim and describe a lathe (see FIG. 5A). Further, it is clear that the lathe supports the tube 12 in the claimed invention. Therefore, this rejection is without merit.

In the "vial tooling apparatus" of Zauner, one of ordinary skill in the art need not look any further than the Abstract to determine that Zauner is clearly not directed toward a lathe. For example, "The plurality of tooling stations are disposed in equal numbers related to the number of chucking stations on two

conveyor assemblies disposed adjacent the periphery of the circle defined by the revolving chucking stations." Applicants request clarification as to how this machine for fabricating articles such as glass vials from tubular stock could even remotely be construed as a "lathe." It is apparently the Examiner's position that since Zauner discloses a chuck assembly, it inherently discloses a lathe. Applicants submit that this interpretation is unreasonable. The Examiner is reminded that the vial tooling apparatus of Zauner further includes "heating stations." However, the presence of heating stations does not mean that the Zauner device is inherently a furnace or a boiler either. Since the Examiner has not attempted to show the presence of a lathe in the prior art of record even remotely related to the claimed invention, this rejection should be withdrawn.

With respect to claim 7, Applicants submit that the prior art of record fails to teach or suggest the unique combination of elements of the claimed invention, including the limitation(s) of "An apparatus for shaping a selected end region of a hollow cylindrical glass tube used in the manufacture of optic fibers comprising. . .a support device for holding the tube at a second region other than the selected end region and for rotating the tube in a controlled manner, *wherein said support device is a lathe*" and *"an optical sensing device for sensing a physical condition of the tube."* (emphasis added) As discussed with respect to claims 1 and 5 hereinabove, the Examiner has failed to show

the support device being a lathe and/or the optical sensing device for sensing a physical condition of the tube. Accordingly, this rejection should be withdrawn.

With respect to claim 19, Applicants submit that the prior art of record fails to teach or suggest the unique combination of elements of the claimed invention, including the limitation(s) of "A method for shaping a selected end of a hollow cylindrical tube comprising the steps of. . .*controlling the heating step with an optical sensor sensing a physical condition of the tube or with an output from a pyrometer.*" (emphasis added) As described on pages 12-13 of the present application, the heating step may be advantageously controlled with an optical sensor and/or a pyrometer.

"The output of pyrometer 80 may also be used to control the application and retraction of the heat source, 16. The heat source 16 may be moved back and forth via a motor 65 which may be controlled by an output from pyrometer 80, or by other means such as an optical sensor 87 coupled via lines 88 to controller 91, or manually, and/or by any other independent or related means. The optical sensor 87 may be used to sense the condition of the tube and then provide a controlling signal." As described in greater detail hereinabove, since the prior art of record fails to teach or suggest these features, this rejection should be withdrawn.

As to the dependent claims, Applicants respectfully submit that these claims are allowable due to their dependence upon an allowable independent claim, as well as for additional limitations provided by these claims.

Claim Rejections Under 35 U.S.C. § 103

Claim 18 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Zauner (U.S. Patent No. 4,444,908). This rejection is respectfully traversed.

In light of the foregoing amendments to the claims, Applicants submit that this rejection has been obviated and/or rendered moot. Specifically, claim 18 has been cancelled.

As discussed hereinabove with respect to the Examiner's rejection under 35 U.S.C. § 102(b), Applicants submit that Zauner fails to teach or suggest all of the limitations of the independent claims. Therefore, this rejection is improper.

On page 6 of the Office Action (under the heading Claim Rejections-35 USC § 103), the Examiner indicates that "It would have been obvious to completely automate the Zauner process/apparatus so that it makes the tubes automatically-because it would be cheaper than having a person do it. It would have been further obvious to use optical imaging to check the final product to make sure that the final product is not defective." However, no

teaching or suggestion from the prior art of record is provided to support the Examiner's allegations. Accordingly, this rejection is improper.

The Examiner has not indicated any basis, corresponding structure or any evidence from the prior art of evidence to support the Examiner's allegations that it simply would have been obvious to add these elements to the Zauner device. Although Applicants appreciate the Examiner's opinion with respect to the alleged obviousness of the claimed invention, Applicants respectfully submit that rejections of this type must come from the prior art of record, e.g., actual evidence to support these opinions must be provided or these rejections should be withdrawn.

Accordingly, it is assumed that the Examiner is relying upon Official Notice in a Final Office to advance this new ground of rejection. Applicants traverse the Examiner's use of Official Notice and request that the record of the present application be properly augmented with evidentiary support for the Examiner's motivation and the required corresponding structure, e.g., either references or an affidavit by the Examiner, see section 2144.03. If the Examiner maintains this rejection responsive to this Office Action, Applicants submit that the Examiner's subsequent Office Action should be Non-Final to provide Applicants with adequate opportunity to determine the basis of the Examiner's rejection under 35 U.S.C. § 103.

In accordance with the above discussion of the patents relied upon by the Examiner, Applicants respectfully submit that these documents, either in combination together or standing alone, fail to teach or suggest the invention as is set forth by the claims of the instant application.

Accordingly, reconsideration and withdrawal of the claim rejection are respectfully requested. Moreover, the Applicants respectfully submit that the instant application is in a condition for allowance.

CONCLUSION

Since the remaining patents cited by the Examiner have not been utilized to reject the claims, but rather to merely show the state-of-the-art, no further comments are necessary with respect thereto.

It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

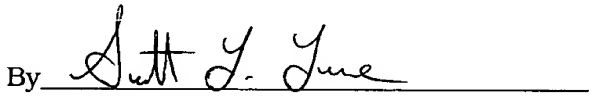
Attached hereto is a marked-up version of the changes made to the application by this Amendment.

In the event there are any matters remaining in this application, the Examiner is invited to contact Matthew T. Shanley, Registration No. 47,074 at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 15-1602 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 

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Attachment: Version with Markings to Show Changes Made

MARKED-UP VERSION OF AMENDMENTS

IN THE CLAIMS

Claims 17 and 18 have been cancelled.

The claims have been amended as follows:

1. (Twice Amended) An apparatus for shaping a selected end region of a hollow cylindrical glass tube used in the manufacture of optic fibers comprising:

a support device for holding the tube at a second region other than the selected end region and for rotating the tube in a controlled manner;

a heat source adapted to supply sufficient heat to the selected end region of the tube to render said tube malleable;

an internal mold having an exterior surface for supporting and shaping the inner surface of the selected end region of the tube when the tube is rendered malleable;

an optical sensing device for sensing a physical condition of the tube;

an insertion device for inserting said internal mold within said selected end region of the tube, prior to the application of heat to the tube, wherein said insertion device includes [at least one of] a sleeve [and] or a handle; and

an exterior molding device for compressing the exterior surface of the selected end region of the tube and for shaping the exterior surface of the selected end region of the tube when rendered malleable, and for, concurrently

causing the shape of the inner surface of the selected end region of the tube to conform to the exterior surface of the internal mold, wherein said exterior molding device includes [at least one of] an exterior mold [and] or a paddle.

3. (Twice Amended) The apparatus as claimed in claim 2, wherein said apparatus further comprises:

an activation device for setting the internal mold to its extended configuration, and for setting the internal mold to its collapsed configuration for withdrawing the mold from the tube through an opening in the selected end region, wherein said activation device includes [at least one of] an air cylinder, a spring-loaded mechanism, [and] or a motor.

5. (Twice Amended) An apparatus for shaping a selected end region of a hollow cylindrical glass tube used in the manufacture of optic fibers comprising:

a support device for holding the tube at a second region other than the selected end region and for rotating the tube in a controlled manner, wherein said support device is a lathe;

a heat source adapted to supply sufficient heat to the selected end region of the tube to render said tube malleable;

an internal mold having an exterior surface for supporting and shaping the inner surface of the selected end region of the tube when the tube is rendered malleable;

an insertion device for inserting said internal mold within said selected end region of the tube, prior to the application of heat to the tube, wherein said insertion device includes [at least one of] a sleeve [and] or a handle; and

an multi-part, exterior mold for compressing the exterior surface of the selected end region of the tube and for shaping the exterior surface of the selected end region of the tube when rendered malleable, and for, concurrently causing the shape of the inner surface of the selected end region of the tube to conform to the exterior surface of the internal mold.

7. (Twice Amended) An apparatus for shaping a selected end region of a hollow cylindrical glass tube used in the manufacture of optic fibers comprising:

a support device for holding the tube at a second region other than the selected end region and for rotating the tube in a controlled manner, wherein said support device is a lathe;

an internal mold for shaping an inner surface of the selected end region of the tube, said internal mold being selectively operable and collapsible

From collapsible cont'd

between an open and extended configuration and a closed and collapsed configuration;

an insertion device for inserting said internal mold within said selected end region of the tube and for setting the internal mold in its extended configuration;

a heat source supplying heat to the selected end region of the tube to render the tube malleable; [and]

[at least one of an external mold and a paddle] a member for compressing the exterior surface of the selected end region of the tube when rendered malleable, and for concurrently causing the shape of an inner surface of the tube to conform to the exterior surface of the internal mold, wherein said member is an external mold or a paddle; and

an optical sensing device for sensing a physical condition of the tube.

8. (Twice Amended) The apparatus as claimed in claim 7, further comprising an activation device for setting the internal mold to its extended configuration and for setting the internal mold to its collapsed configuration for withdrawing the mold from the tube through an opening in the selected end region, wherein said activation device includes [at least one of] an air cylinder, a spring-loaded mechanism, [and] or a motor.

19. (Twice Amended) A method for shaping a selected end of a hollow cylindrical tube comprising the steps of:

positioning the tube within a support device and rotating the tube;

inserting an internal mold within the selected end region of the tube to support the tube end when the tube is being shaped and for controlling the shape of an inner surface of the tube end, wherein the internal mold is operatively collapsible between an extended and open configuration and a collapsed and closed configuration;

heating the selected end of the tube with a heat source until the selected end becomes malleable; [and]

controlling the heating step with an optical sensor sensing a physical condition of the tube or with an output from a pyrometer;

compressing the exterior surface of the selected end region of the tube for concurrently shaping the exterior and inner surfaces of the selected end region of the tube into a predetermined form, wherein the exterior surface of the selected end region is compressed with at least one of an exterior mold and a paddle.